We claim:

1. A printing machine, which includes at least two printing unit groups having drives which are decoupled from one another and assigned, respectively, to one printing unit group, and having printing units with transfer cylinders, comprising compensation elements for compensating for speed differences and positional errors between two printing unit groups, the compensation elements being assigned to a printing unit group which is an accepting printing unit group, in order to compensate for transfer errors.

2. A printing machine, which includes at least two printing unit groups having drives which are decoupled from one another and assigned, respectively, to one printing unit group, and having printing units with transfer cylinders, comprising compensation elements for compensating for speed differences and positional errors between two printing unit groups, the compensation elements being assigned to a first transfer cylinder of a printing unit group which is an accepting printing unit group, in order to compensate for transfer errors.

3. A printing machine for printing sheet material, which includes at least two printing unit groups having drives which are decoupled from one another and assigned, respectively, to one printing unit group, and having printing units with

transfer cylinders, comprising, for transferring the printed sheets, a dynamic control device and compensation elements for compensating for speed differences and positional errors between two printing unit groups, the compensation elements being assigned to a first transfer cylinder of a printing unit group which is an accepting printing unit group, in order to compensate for transfer errors.

4. A printing machine for printing sheet-type material, which includes at least two printing unit groups having drives which are decoupled from one another and assigned, respectively, to one printing unit group, and having printing units with transfer cylinders, which comprise, for transferring the printed sheets, a dynamic control device and compensation elements for compensating for speed differences and positional errors between two printing unit groups, the compensation elements being assigned to a printing unit group which is an accepting printing unit group, in order to compensate for transfer errors.

5. The printing machine according to claim 4, wherein the dynamic control device is connected for communicating with the printing unit groups so as to record operating parameters, and is connected for communicating with the compensation elements so as to control the transfer.

6. The printing machine according to claim 4, including sensors selected from the group consisting at least of charge-coupled switching elements, photosensors, electronic and electromagnetic sensors, and assigned to the printing unit groups, for recording operating parameters of the printing unit groups, and for passing said parameters on to data processing elements of the dynamic control device.

7. The printing machine according to claim 6, wherein the sensors are selected from the group thereof consisting of charge-coupled switching elements, photosensors, and electronic and electromagnetic sensors.

8. The printing machine according to claim 4, wherein the compensation elements have a gripper system which, in order to compensate for a speed difference between two printing unit groups and to correct the position of the printed sheet, is arranged parallel to the cylinder surface and axially displaceably on the first transfer cylinder of the accepting printing unit group.

9. The printing machine according to claim 8, wherein said gripper system comprises a dynamic actuator and a gripper bar for picking up the printed sheets, the position of said gripper bar being displaced by said actuator at constant

radius in a peripheral direction on the transfer cylinder in accordance with the speed difference.

10. The printing machine according to claim 9, wherein said actuator is an element selected from the group thereof consisting of piezoelectric and magnetostrictive elements.

11. The printing machine according to claim 4, wherein the cylinders of the printing unit groups have an arrangement by which, after the printed sheet has been accepted by the gripper system of the transfer cylinder, the printed sheet is fixed only at one location in the accepting printing unit group.

12. The printing machine according to claim 4, wherein said gripper bar is axially displaceable in the direction of the axis of rotation of the first transfer cylinder for correcting the position of the printed sheet.

13. A method of transferring printed sheets in a printing machine, which comprises determining a difference in speed between two decoupled printing unit groups, and displacing a gripper system parallel to the surface of a cylinder during the sheet transfer so as to compensate thereby for the difference in speed between the printing unit groups on a first transfer cylinder of an accepting printing unit group.

14. The method according to claim 13, which includes determining a positional error of the printed sheet on the first transfer cylinder of the accepting printing unit group, and correcting the position of the printed sheet parallel to the cylinder surface and axially displaceably on the first transfer cylinder of the accepting printing unit group.

15. The method according to claim 13, which includes having the dynamic control device register the operating parameters of the printing unit groups before the printed sheet is transferred, determine differences in speed and control the compensation elements in a compensatory manner during the sheet transfer.

16. The method according to claim 13, which includes having the dynamic control device register the position of the printed sheet on the first transfer cylinder of the accepting printing unit group after the sheet transfer, and control the compensation elements in a corrective manner after the sheet transfer.

17. The method according to claim 13, which includes completing the positional correction before the sheet transfer to the second cylinder of the accepting printing unit group.

18. The method according to claim 13, which includes, in a first step, wherein a difference in speed is compensated for, displacing the actuator parallel to the cylinder surface of the first transfer cylinder of the accepting printing unit group; in a second step, having the gripper system of the first transfer cylinder of the accepting printing unit group accept the printed sheet from the preceding printing unit group; in a third step, registering the position of the printed sheet and, if necessary, determining a positional correction; in a fourth step, having the actuator make the positional correction on the first transfer cylinder of the accepting printing unit group; in a fifth step, having the actuator moved into a rest position for the printed sheet transfer to the second cylinder of the accepting printing unit group; and in a sixth step, moving the actuator back into the initial position thereof after the printed sheet transfer to the second cylinder of the accepting printing unit group.